

ABSTRACT

Highly efficient cationic liposomes have been developed as an improved delivery system for biologically-active reagents. A novel structure, the sandwich liposome, is formed and comprises one or more biologically active agents internalized between two bilomellar liposomes. This structure protects the incoming agent and accounts for the high efficiency of *in vivo* delivery and for the broad tissue distribution of the sandwich liposome complexes.

These novel liposomes are also highly efficient carriers of nucleic acids. By using extruded DOTAP:cholesterol liposomes to form complexes with DNA encoding specific proteins, expression has been improved dramatically. Highest expression was achieved in the lung, while increased expression was detected in several organs and tissues.

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